IN THE SPECIFICATION:

Please amend the "DISCLOSURE OF INVENTION" beginning on page 3 at line 5:

--To solve the foregoing problems, according to the present invention, ~~is characterized by~~ an information storage apparatus including:

a cold cathode electron beam emitting ~~means~~ part;

a flat anode opposed to the cold cathode electron beam emitting part; and

a storage medium formed on the front or back of the anode and used for storing and reading information in accordance with irradiation with an electron beam emitted from the cold cathode electron beam emitting ~~means~~ part has the following features.

~~Storage and reading of information by irradiating the storage medium with an electron beam emitted from the cold cathode electron beam emitting means in the manner described above enables a minute region of the storage medium to store one bit of information. Accordingly, the storage density is greatly increased to allow storage of a large amount of information. In addition, the size of the apparatus and power consumption are reduced and high-speed access is achieved.~~

~~As the cold cathode electron beam emitting means, a spindt-type cold cathode with a sharp point or a cold cathode in which one or a plurality of carbon nanotubes are placed on a base may be used, for example. Alternatively, a ballistic electron emitting element may be used. Use of such cold cathode electron beam emitting means enables storage of a large amount of information easily with the area of a storage region for one bit reduced.~~

The cold cathode electron beam emitting part may include [[A]] a cold cathode ~~may be~~ placed in a chamber surrounded by a partition and a film capable of transmitting an electron beam such that the inside of the chamber has a higher degree of vacuum than the outside thereof. In such a case, the degree of vacuum around a spindt-type cold cathode or [[the]] carbon nanotubes, for example, is maintained and attachment of foreign matters and others are prevented with ease. Accordingly, even in the [[case]] cases of a spindt-type cold cathode and a small number of carbon nanotubes, the beam spot size is more easily reduced so that the storage density is increased without decrease in stability of electron emission.

Furthermore, in a case where an accelerating ~~means~~ part for accelerating an electron

beam emitted from the cold cathode electron beam emitting ~~means~~ part, a deflection ~~means~~ part for deflecting the electron beam in one- or two-dimensional directions, and a convergence ~~means~~ part for causing the electron beam to converge ~~may be~~ are provided with a given electric field or magnetic field generated~~. These means may not only be individual components but also be united to have two or more functions by setting the form of an electrode or an applied voltage. An~~, an electron beam may be accelerated in such a manner that a plurality of electrodes to which voltages with different phases are applied are provided and thereby a moving electric field is generated. The cold cathode electron beam emitting ~~means~~ part may be configured in such a manner that a plurality of electron emitting parts are provided to emit electron beams at different timings according to the distance from a given center so that the emitted electron beams converge. With these configurations, the presence and absence of emission of an electron beam, the energy thereof and an irradiated position and an irradiated area on the storage medium, for example, are easily controlled.

To irradiate only a given region of the storage medium with an electron beam, an electron beam passing through a minute hole formed in a shielding ~~means~~ part such as a plate member may be adjusted to reach the storage medium. If at least one of such a plate member and the storage medium is moved by an actuator using a so-called micromachine technology, reduction of an area of the storage medium irradiated with an electron beam and control of the irradiated position are also easily achieved. An electrode may be provided around the minute hole to form an electrolytic lens. Then, the efficiency in using an electron beam is enhanced and, in addition, a region irradiated with an electron beam is smaller than the diameter of the minute hole, thus further increasing the storage density.

~~Examples of the storage medium for storing information by irradiation with an electron beam as described above include: a phase change film that changes into a crystallized state or an amorphous state in accordance with the energy of the electron beam for irradiation; a component using a material in which a hole is formed or whose film thickness varies by irradiation with an electron beam at a given energy level; an insulator film capable of accumulating and emitting charge in accordance with irradiation with an electron beam; and a component using a material which obtains a fluorescent property upon irradiation with an electron beam.~~

A plurality of electron beams may be emitted to fall on a plurality of regions of the

storage medium so that a plurality of bits of information is stored or read out at the same time. Accordingly, storage and reading are performed at higher speed.

~~Irradiated~~ An irradiated-position-shift detecting ~~means~~ part for detecting a shift between a given reference position and a position in the storage medium irradiated with an electron beam may be provided so that the irradiated position is controlled by calibration or feedback control. Then, the accuracy in locating the irradiated position is enhanced, and the storage density is more easily increased.

Part of information stored and read out at the same time may be used for error detection or error correction.--